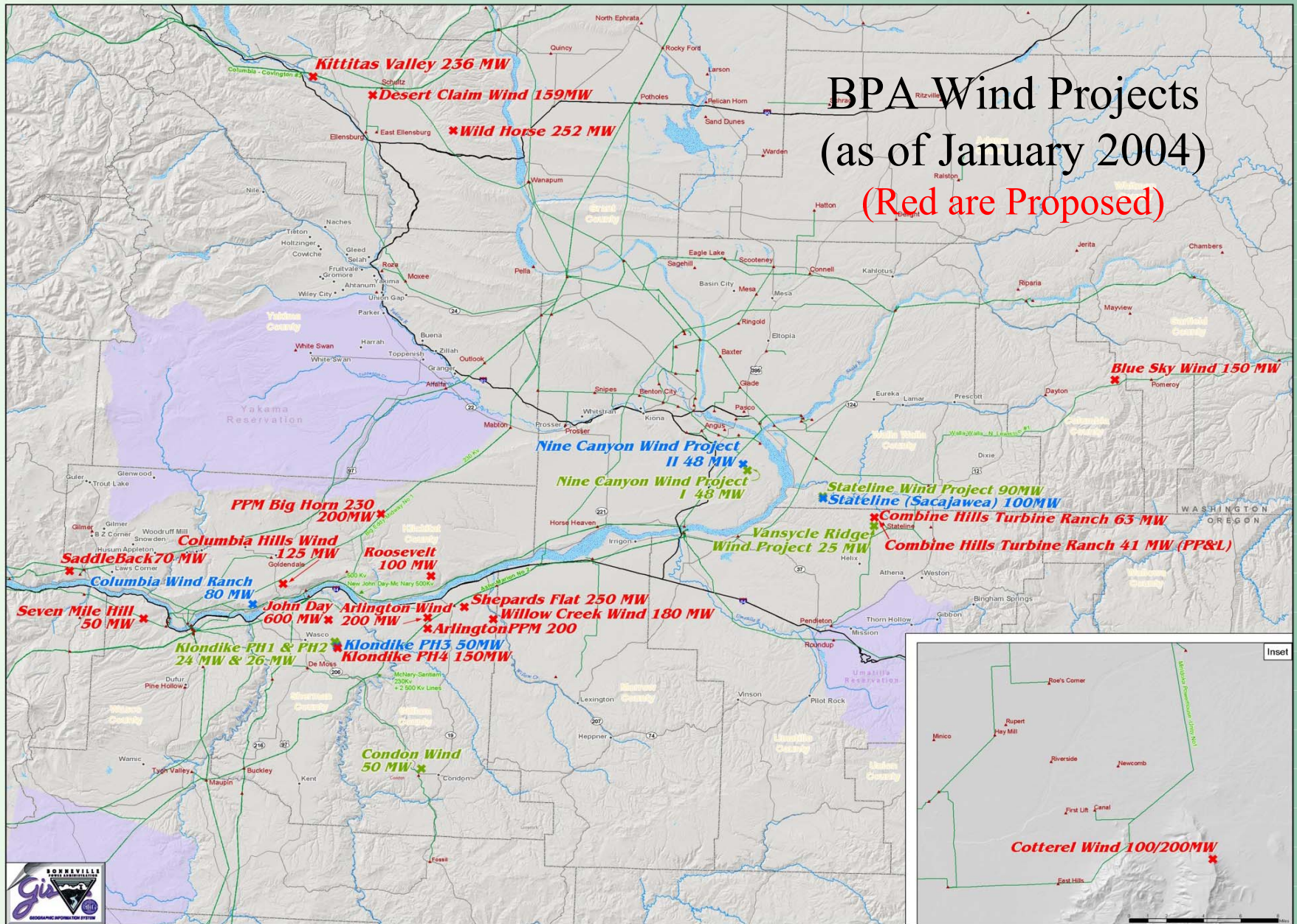# Regional Wind Development Transmission Update

March 18, 2004

BPA Wind Projects
(as of January 2004)
(Red are Proposed)

Update on Wind Projects

- Updated Wind Map
- Some dropped / Some added – Requests still quite active
- Still above 4,000 MW of proposed generation
- Recent RFP's causing much activity for TBL, some may connect through BPA system

Bonneville
Power Administration
Transmission

TBL Grid Improvements Status

- Puget Sound Area Additions – Kangley-Echo Lake 500kV line and Snoking Transformer, Completed 12/2003

- Celilo HVDC Intertie Upgrade – Under Construction – 2004 Completion

- Grand Coulee-Bell 500-kV line Addition – Under Construction – 2004 Completion

- Hanford Area Projects – New Wautoma 500-kV Substation and Schultz-Wautoma 500-kV line, Scheduled 2005

- McNary-John Day 500-kV line – 2007 (On Hold)

- Paul-Allston-Troutdale Reinforcement – 2007 (On hold)

- Cross-Cascades North Reinforcement – (Schultz Cap Add'n) 2007

- I5 South Reinforcement (Oregon City 500/230kV Transformer Addition) – 12/2003

Bonneville
Power Administration
Transmission

Wind Issues/Strategies

- Continued lack of transmission in certain parts of system impacting Wind Integration.

- Developers now looking at areas with transmission availability.

- PBL Storage and Shaping Product getting a lot of attention.

PBL New Products for Wind

- NT Wind Integration Service ($4.5/MWh)
  - NT Customer adds as NT Resource
  - PBL Provides Load Regulation, Scheduling, Etc
- PBL Storage and Shaping Service ($6/MWh):
  - For non-NT Customers
  - May Require Two Wheels, one into Hydro System
  - PBL "Exchange" for Hydro
  - PBL Schedules Delivery 1 week later (2nd Wheel)
    - Easy to Schedule Averaged Output
- PBL not actively Purchasing Generation at this time

Other Strategies

- Wind Industry Advocating:
  - Dynamic Scheduling – Moving a project control to a control area with more resources for firming
  - Virtual Wheeling - Generators swapping load or delaying delivery to relieve congestion across a flow gate
  - Curtailable Firm – Proposed product to get around constrained areas:
    - Firm Xmsn Rights (long term)
    - Schedules limited when Xmsn Constrained
    - Curtailed before other Firm Xmsn

Bonneville
Power Administration
Transmission

Questions?